UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/385,918 | 08/30/1999 | Merl F. Hoekstra | 860098.433 | 9788 |

7590 11/02/2005

Pennie & Edmonds LLP
1155 Avenue of the Americas
New York, NY 10036

| EXAMINER | |
|---|---|
| ROBINSON, HOPE A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1656 | |

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/385,918 | HOEKSTRA ET AL. | |
| | Examiner | Art Unit | |
| | Hope A. Robinson | 1656 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-10,54 and 55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,54 and 55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 August 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/23/01; 1/8/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Application Status*

1. The finality of the Office action mailed on August 8, 2001 has been withdrawn in favor of the following.

2. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1656.

### *Claim Disposition*

3. Claims 1-10 and 54-55 are pending and are under examination.

### *Information Disclosure Statement*

4. The Information Disclosure Statements filed on March 23, 2001 and January 8, 2003 have been received and entered. The references cited on the PTO-1449 Form have been considered by the examiner and a copy is attached to the instant Office action.

### *Withdrawn Rejections*

5. Previous rejections under 35 U.S.C. 112, first and second paragraphs and 103(a) are withdrawn by virtue of the interview on February 22, 2002, the declaration filed under 37 CFR 1.131 on January 28, 2002 and amendments made to the claims.

***New Objections/Rejections***

***Drawing***

6. The drawings are objected to because Figures 2, 3, 4, 9, 10, 11 and 12 are blurry and dark, thus hard to discern lanes. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. In addition, see the attached Draftman's notification.

### *Claim Objection*

7. Claims 2-10 and 54-55 are objected to because of the following informalities:

For clarity and precision of claim language, it is suggested that claim 2-10 and 54-55 are amended to recite "The method according to claim...", instead of "A method according to claim ...".

For clarity and consistency it is suggested that the three letter code is used for amino acids instead of the one letter code, see claims 2, 4, 54 and 55 which used the one letter code and claim 3 which uses the three letter codes.

Claim 2 is objected to because the word "ubiquitin" is misspelled as "upiquitin".

Correction of the above is required.

### *Claim Rejections - 35 USC э 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-10 and 54-55 are rejected under 35 U.S.C. 112, first paragraph, because the specification while being enabling for methods using a HECT E3 ubiquitin ligase domain, does not reasonably provide enablement for methods using variants of either such a domain or of a polypeptide comprising such a domain. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The enablement requirement refers to the requirement that the specification describe how to make and how to use the invention. There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is undue. These factors include, but are not limited to: Quantity of Experimentation Necessary; Amount of direction or guidance presented; Presence or absence of working examples; Nature of the Invention; State of the prior art and Relative skill of those in the art; Predictability or unpredictability of the art and Breadth of the claims (see *In re Wands, 858 F.2d at 737, 8 USPQ2d at1404 (Fed. Cir. 1988)*. The factors most relevant to the instant invention are discussed below.

The amount of experimentation required to practice the claimed invention is undue as the claims encompass an unspecified amount of variants thereof. The instant specification and claims identify polypeptides comprising a HECT E3 ubiquitin ligase WW domain and Smad PY motif, however, no conserved domains or structural characteristics are provided for the claimed variants thereof. Neither the instant specification or claims provide any indication as to where in the sequence the variability will occur or demonstration that the variability encompassed in the claims is tolerated by the claimed sequences. A skilled artisan would have to engage in undue experimentation to construct said variants and test same for activity or the desired properties of the native proteins.

Predictability of which potential changes can be tolerated in a protein's amino acid sequence and obtain the desired activity requires a knowledge of and guidance

with regard to which amino acids in the protein's sequence, if any, are tolerant of modification and which are conserved (for example, expectedly intolerant to modification), and detailed knowledge of the ways in which the protein's structure relates to its function. In addition, one skilled in the art would expect any tolerance to modification for a given protein to diminish with each further and additional modification, for example, multiple substitutions. In this case, the necessary guidance has not been provided in the specification. Therefore, while it is known in the art that many amino acid substitutions are possible in any given protein, the positions within the protein's sequence where such amino acid substitutions can be made with a reasonable expectation of success are limited, as certain positions in the sequence are critical to the protein's structure/function relationship. It is also known in the art that a single nucleotide or amino acid change or mutation can destroy the function of the biomolecule in many cases. For example, various sites or regions directly involved in binding activity and in providing the correct three-dimensional spatial orientation of binding and active sites can be affected (see Wells, Biochemistry, vol. 29, pages 8509-8517, 1990). The instant specification provides no guidance/direction as to which regions of the protein would be tolerant of modifications and which would not, and it provides no working examples of any variant sequence that is encompassed by the claims. It is in no way predictable that randomly selected mutations, such as deletions, substitutions, additions, etc., in the disclosed sequences would result in a protein having activity comparable to the one disclosed. As plural substitutions for example are introduced, their interactions with each other and their effects on the structure and function of the

protein is unpredictable. The skilled artisan would recognize the high degree of unpredictability that all the fragments/variants encompassed in the claims would retain the recited function.

The state of the prior art provides evidence for the high degree of unpredictability as stated above. The art is very clear on the fact that modifications to a protein's structure can affect the protein's structure function relationship. For example, Guo et al. (PNAS, vol. 101, no.25, pages 9205-9210, 2004) disclose that a third of single amino acid changes would completely inactivate the average protein and the more substitutions made the more probability that the protein will be inactivated. Thus, this gives the sense of what one of skill in the art can expect when a claim embraces fragments with up to 10, 20, 30, 40 or more amino acid changes and how many mutants one of skill in the art can test in such an endeavor. Note that the claims recite the open language comprising which puts no limit on the size of the variant/fragment.

The specification lacks adequate guidance/direction to enable a skilled artisan to practice the claimed invention commensurate in scope with the claims. While recombinant and mutagenesis techniques are known in the art, it is not routine in the art to screen large numbers of mutated proteins where the expectation of obtaining similar activity is unpredictable based on the instant disclosure. The amino acid sequence of a protein determines its structural and functional properties, and predictability of what mutations can be tolerated in a protein's sequence and result in certain activity, which is very complex, and well outside the realm of routine experimentation, because accurate predictions of a protein's function from mere sequence data are limited, therefore, the

general knowledge and skill in the art is not sufficient, thus the specification needs to provide an enabling disclosure. It is noted that the claims recite "is not substantially diminished" with regard to the desired properties in the protein, however, the statement on its own is insufficient absent evidence. Page 14 of the specification discloses that substantially diminished is exemplified by "enhanced, unchanged or diminished by no more than 10%" relative to the native WW domain sequence. Note that diminished and the terms enhanced or unchanged are not synonymous. Additionally, "diminished by no more than 10%", includes a lot of variability, which is not supported by the instant specification. For example, SEQ ID NO:1 could have approximately 11 residues varied, whether by deletion, substitution, addition etc., and there is no indication of whether it would be 11 contiguous residues or any 11 residues in the sequence. There is no demonstration in the instant specification of said sequences retaining function.

The working examples provided do not rectify the missing information in the instant specification pertaining to the claimed variants. The nature and properties of the claims are difficult to ascertain from the example provided as one of skill in the art would have to engage in undue experimentation to construct the unlimited amount of variants of the claimed invention and examine the same for function.

The specification does not provide support for the broad scope of the claims, which encompass an unspecified amount of variants. The issue in this case is the breath of the claims in light of the predictability of the art as determined by the number of working examples, the skill level artisan and the guidance presented in the instant specification and the prior art of record. This make and test position is inconsistent with

the decisions of *In re Fisher, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970)* where it is stated that "...scope of claims must bear a reasonable correlation to scope of enablement provided by the specification to persons of ordinary skill in the art...". Without sufficient guidance, determination of having the desired biological characteristics is unpredictable and the experimentation left to those skilled in the art is unnecessarily and improperly extensive and undue. See *In re Wands, 858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988)*. Therefore, absent direction/guidance regarding whether the structure of the polypeptides can tolerate the modifications contemplated a non-functional protein may result and one of skill in the art would not be able to practice the claimed invention commensurate in scope with the claims. In addition, absent direction/guidance regarding characteristics of the variants one of skill in the art would not be able to make the claimed variants thereof.

Thus, for all these reasons, the specification is not considered to be enabling for one skilled in the art to make and use the claimed invention as the amount of experimentation required is undue, due to the broad scope of the claims, the lack of guidance and working examples provided in the specification and the high degree of unpredictability as evidenced by the state of the prior art, attempting to construct and test variants of the claimed invention would constitute undue experimentation. Making and testing the infinite number of possible variants to find one that functions as described is undue experimentation. Therefore, applicants have not provided sufficient guidance to enable one of skill in the art to make and use the claimed invention in a

manner that reasonably correlates with the scope of the claims, to be considered enabling.

9. Claims 1-10 and 54-55 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The instant specification and claims identify polypeptides comprising a HECT E3 ubiquitin ligase WW domain and Smad PY motif and includes variants thereof, however, no conserved domains or structural characteristics are provided for the claimed variants. Neither the instant specification or claims provide any indication as to where in the sequence the variability will occur or demonstration that the variability encompassed in the claims is tolerated by the claimed sequences. Therefore, the skilled artisan cannot envision the detailed chemical structure of the claimed variant polypeptides, thus, claims reciting said variants lacks adequate written description. In addition, the claimed methods do not provide a clear nexus between BMP-mediated signaling and the HECT E3 ubiquitin ligase WW domain and Smad.

Additionally, the instant specification does not demonstrate possession of said variant polypeptides. The claims encompass a large genus of variants. The specification fails to provide any additional representative species of the claimed genus to show that applicant was in possession of the claimed genus. A representative number of species means that the species, which are adequately described are

representative of the entire genus. The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice, disclosure of drawings, or by disclosure of relevant identifying characteristics, for example, structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus.

Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus. The claimed genus of variant polypeptides could include non-functional proteins or proteins with a different function than the one described. Further, *Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir.1991)*, states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in *possession of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed*" (See page 1117). The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed" (See *Vas-Cath* at page 1116). The skilled artisan cannot envision the detailed chemical structure of the encompassed genus of polypeptides, and therefore, conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is

part of the invention and reference to a potential method of isolating it. The compound itself is required. *See Fiers v. Revel, 25 USPQ2d 1601 at 1606 (CAFC 1993).*

Therefore, for all these reasons the specification lacks adequate written description, and one of skill in the art cannot reasonably conclude that the applicant had possession of the claimed invention at the time the instant application was filed.

***Basis For NonStatutory Double Patenting***

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1 and 4 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 55-60 of copending application number 10/307,956. An obvious-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would have been obvious over, the reference claim(s). *See In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); and In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985).* Although the conflicting claims are not identical, they are not patentably distinct from each other.

The instant application claim is directed to a method for screening for an agent that modulates BMP-mediated signaling comprising contacting with polypeptides having the HECT E3 ubiquitin ligase WW domain and Smad PY motif and a candidate agent. The instant claimed invention is also directed to a Smad PY motif comprising SEQ ID NOS: 16 and 18. The copending application is directed to a method for modulating TGF-beta and/or BMP-mediated signaling in a cell comprising contacting a cell with an agent that affects binding of HECT E3 ubiquitin ligase WW domain to a Smad PY motif. The copending application is also directed to Smad PY motif of SEQ ID

NOS: 16 and 18. The two sets of claims differ as the instant application claims require more steps, whereas the copending claims have one step, but recites the open language "comprising". However, both sets of claims includes modulation of a BMP-mediated signaling with an agent wherein said agent affects binding with respect to HECT E3 ubiquitin ligase WW domain and Smad PY motif.

Although the scope of the claims herein differs, the two sets of claims are directed to similar inventions as the claim language has the same material and the copending application claims are a species of the genus claims contained in the instant application. One of ordinary skill in the art would be motivated to modify the instant claims to recite, for example, "an agent that inhibits or stimulates binding" because it is known in the art that modulates means inhibition/stimulation because it clarifies the claim by providing the specific terms. Thus, the copending claims are an obvious variation of the instant application claim, therefore prima facie obvious.

This is a provisional obvious-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103 (a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103 (c) and potential 35 U.S.C. 102 (f) or (g) prior art under 35 U.S.C. 103 (a).

13. Claims 1-2, 4, 54 and 55 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Pirozzi et al. (U.S. Patent No. 6,011,137, April 3, 1996), based on the broad recitation of variant thereof.

Pirozzi et al. teach methods and assays to screen compounds that are agonist or antagonist (inhibitors) of the interaction of a polypeptide having a WW domain by using a candidate compound (see column 7). Moreover, it is known in the prior art that the WW domain is involved in cell signaling and growth regulation or the organization of the cytoskeleton. Pirozzi et al. teach the sequence set forth in SEQ ID NO: 2 with a 75% sequence identity, a variant thereof (see the alignment) and teach the motif "PPPY" which can be construed as a variant thereof of the sequence set forth in SEQ ID NOS: 15, 16 and 18 (Smad PY motif). Pirozzi et al. does not teach a method to specifically screen for an agent that modulates BMP-mediated signaling, however, the screening method of Pirozzi et al. absent evidence to the contrary would effectively screen BMP-

mediated signaling as it effectively screens for candidates affecting the WW domain involved in cell signaling.

Therefore, it would have been obvious to one of ordinary skill in the art to arrive at the claimed invention as a whole because Pirozzi et al. teach a screening method useful for detecting agonist/antagonist of the WW domain interaction with agents/candidate compound and the art recognizes the involvement of said domain with cell signaling. Thus, it would have been obvious to one of ordinary skill in the art to modify the teachings of Pirozzi et al. to use the interaction of Smad and a HECT E3 ubiquitin protein ligase to screen for effectors of BMP function. Further, the specification on page 2, disclose that "to date eight Smad protein have been identified and shown to participate in signal responses induced by TGF-Beta family members (i.e, BMP), which serves as admitted prior art. Thus, the claimed invention was obvious to make and use at the time it was made and was *prima facie* obvious.

***Response to Arguments***

14. The response filed on February 25, 2002 has been considered. Note that the rejections of record have been withdrawn in favor of the above rejections, which clarifies the record and fully addresses the claimed subject matter. As the record reflects a rejection under 35 U.S.C. 112, first paragraph and 103, the issues raised by applicant pertaining to these statues will be herein addressed.

Regarding the art rejection under 35 U.S.C. 112, first paragraph enablement, the claims broadly read on any fragment thereof and the instant specification lacks support for the full scope of the claims. The claims recite variants and the language "is not substantially diminished relative to the HECT E3 ubiquitin ligase", however, a mere statement absent evidence bears no weight. The specification on page 14 provides a definition, which is exemplary and not limiting, thus doesn't breathe life into the claims. Further, the definition of "no more than 10%" for substantially diminished leaves room for a lot of variability not supported by the instant specification. Thus, the issue is that the claims are not commensurate in scope with the instant specification and the make and test invitation in light of predictability in the art for the claimed variants. As applicant has not demonstrated possession of all the variants encompassed by the claims, the written description rejection is instituted under 35 U.S.C. 112, first paragraph. Note that a new ground of rejection has been instituted under 35 U.S.C. 103 (a). Applicant's declaration filed to demonstrate possession of the claimed invention prior to the art of record has been considered and was persuasive. However, the claimed invention remains obvious for the reasons stated above.

***Conclusion***

15. No claims are presently allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hope A. Robinson whose telephone number is 571-272-0957. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen Kerr, can be reached at (571) 272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hope Robinson, MS

Patent Examiner 10/17/05

KATHLEEN M. KERR, PH.D.
SUPERVISORY PATENT EXAMINER

OM protein - protein search, using sw model

Run on: October 13, 2005, 13:50:53 ; Search time 15.7143 Seconds
(without alignments)
156.763 Million cell updates/sec

Title: US-09-385-918-2
Perfect score: 129
Sequence: 1 GPLPXGWEXXXXXXGXXYYXXHNTXTTXWXXPX 33

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 97 | 75.2 | 38 | 3 | US-08-630-916A-36 | Sequence 36, Appl |
| 2 | 95 | 73.6 | 158 | 4 | US-09-270-767-59345 | Sequence 59345, A |
| 3 | 95 | 73.6 | 435 | 4 | US-09-270-767-43942 | Sequence 43942, A |
| 4 | 93 | 72.1 | 33 | 3 | US-08-630-916A-39 | Sequence 39, Appl |
| 5 | 92 | 71.3 | 38 | 3 | US-08-630-916A-26 | Sequence 26, Appl |
| 6 | 92 | 71.3 | 38 | 3 | US-08-630-916A-35 | Sequence 35, Appl |
| 7 | 92 | 71.3 | 38 | 3 | US-08-348-518C-18 | Sequence 18, Appl |
| 8 | 92 | 71.3 | 38 | 3 | US-08-476-509B-18 | Sequence 18, Appl |
| 9 | 92 | 71.3 | 766 | 3 | US-08-539-205A-4 | Sequence 4, Appli |
| 10 | 92 | 71.3 | 766 | 4 | US-09-392-163A-4 | Sequence 4, Appli |
| 11 | 92 | 71.3 | 906 | 3 | US-08-630-916A-48 | Sequence 48, Appl |
| 12 | 91 | 70.5 | 38 | 2 | US-09-066-074-12 | Sequence 12, Appl |
| 13 | 91 | 70.5 | 38 | 2 | US-08-555-912A-12 | Sequence 12, Appl |
| 14 | 91 | 70.5 | 38 | 3 | US-08-630-916A-19 | Sequence 19, Appl |
| 15 | 91 | 70.5 | 38 | 3 | US-08-630-916A-38 | Sequence 38, Appl |
| 16 | 91 | 70.5 | 38 | 3 | US-08-348-518C-16 | Sequence 16, Appl |
| 17 | 91 | 70.5 | 38 | 3 | US-08-476-509B-16 | Sequence 16, Appl |
| 18 | 91 | 70.5 | 38 | 4 | US-09-252-404A-37 | Sequence 37, Appl |
| 19 | 91 | 70.5 | 38 | 4 | US-09-275-900-12 | Sequence 12, Appl |
| 20 | 91 | 70.5 | 224 | 3 | US-08-630-916A-50 | Sequence 50, Appl |
| 21 | 91 | 70.5 | 297 | 4 | US-09-949-016-8946 | Sequence 8946, Ap |
| 22 | 90 | 69.8 | 38 | 3 | US-08-630-916A-14 | Sequence 14, Appl |
| 23 | 90 | 69.8 | 38 | 3 | US-08-630-916A-16 | Sequence 16, Appl |
| 24 | 90 | 69.8 | 38 | 3 | US-08-348-518C-12 | Sequence 12, Appl |
| 25 | 90 | 69.8 | 38 | 3 | US-08-476-509B-12 | Sequence 12, Appl |
| 26 | 90 | 69.8 | 472 | 3 | US-08-348-518C-5 | Sequence 5, Appli |
| 27 | 90 | 69.8 | 472 | 3 | US-08-476-509B-5 | Sequence 5, Appli |
| 28 | 90 | 69.8 | 486 | 3 | US-08-348-518C-2 | Sequence 2, Appli |
| 29 | 89 | 69.0 | 38 | 3 | US-08-630-916A-22 | Sequence 22, Appl |
| 30 | 89 | 69.0 | 38 | 3 | US-08-348-518C-17 | Sequence 17, Appl |
| 31 | 89 | 69.0 | 38 | 3 | US-08-476-509B-17 | Sequence 17, Appl |
| 32 | 89 | 69.0 | 474 | 4 | US-09-774-639-371 | Sequence 371, App |
| 33 | 89 | 69.0 | 752 | 4 | US-09-919-039-235 | Sequence 235, App |
| 34 | 89 | 69.0 | 852 | 2 | US-09-070-060-3 | Sequence 3, Appli |
| 35 | 89 | 69.0 | 852 | 3 | US-09-357-746-3 | Sequence 3, Appli |
| 36 | 89 | 69.0 | 854 | 2 | US-09-070-060-4 | Sequence 4, Appli |
| 37 | 89 | 69.0 | 854 | 3 | US-09-357-746-4 | Sequence 4, Appli |
| 38 | 88 | 68.2 | 38 | 3 | US-08-630-916A-15 | Sequence 15, Appl |
| 39 | 88 | 68.2 | 38 | 3 | US-08-630-916A-32 | Sequence 32, Appl |
| 40 | 88 | 68.2 | 38 | 3 | US-08-348-518C-11 | Sequence 11, Appl |
| 41 | 88 | 68.2 | 38 | 3 | US-08-476-509B-11 | Sequence 11, Appl |
| 42 | 88 | 68.2 | 683 | 3 | US-08-630-916A-46 | Sequence 46, Appl |
| 43 | 87 | 67.4 | 89 | 4 | US-09-248-796A-18186 | Sequence 18186, A |
| 44 | 87 | 67.4 | 834 | 3 | US-08-539-205A-6 | Sequence 6, Appli |
| 45 | 87 | 67.4 | 834 | 4 | US-09-392-163A-6 | Sequence 6, Appli |

ALIGNMENTS

RESULT 1
US-08-630-916A-36
; Sequence 36, Application US/08630916A
; Patent No. 6011137
; GENERAL INFORMATION:
; APPLICANT: Pirozzi, Gregorio
; APPLICANT: Kay, Brian K.
; APPLICANT: Fowlkes, Dana M.
; TITLE OF INVENTION: IDENTIFICATION AND ISOLATION OF NOVEL
; TITLE OF INVENTION: POLYPEPTIDES HAVING WW DOMAINS AND METHODS OF USING SAME
; NUMBER OF SEQUENCES: 124
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: United States
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/630,916A
; FILING DATE: 03-APR-1996
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: MISROCK, S. LESLIE
; REGISTRATION NUMBER: 18,872
; REFERENCE/DOCKET NUMBER: 1101-203
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 896-8864/9741
; INFORMATION FOR SEQ ID NO: 36:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 38 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: unknown
; MOLECULE TYPE: peptide
US-08-630-916A-36

Query Match 75.2%; Score 97; DB 3; Length 38;
Best Local Similarity 53.1%; Pred. No. 1.6e-10;
Matches 17; Conservative 0; Mismatches 15; Indels 0; Gaps 0;

```
Qy          1 GPLPXGWEXXXXXXGXXYYXXHNTXTTXWXXP 32
              |||| |||      |  ||  ||| || |  |
Db          1 GPLPPGWEKRQDVNGRVYYVNHNTRTTQWEDP 32
```

```
RESULT 2
US-09-270-767-59345
; Sequence 59345, Application US/09270767
; Patent No. 6703491
; GENERAL INFORMATION:
;  APPLICANT: Homburger et al.
;  TITLE OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster
;  FILE REFERENCE: File Reference: 7326-094
;  CURRENT APPLICATION NUMBER: US/09/270,767
;  CURRENT FILING DATE: 1999-03-17
;  NUMBER OF SEQ ID NOS: 62517
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 59345
;   LENGTH: 158
;   TYPE: PRT
;   ORGANISM: Drosophila melanogaster
US-09-270-767-59345

  Query Match             73.6%;  Score 95;  DB 4;  Length 158;
  Best Local Similarity   50.0%;  Pred. No. 1.8e-09;
  Matches   16;  Conservative    1;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 GPLPXGWEXXXXXXGXXYYXXHNTXTTXWXXP 32
              |||| |||       |  :|  ||| || |  |
Db         55 GPLPEGWEERVHTDGRVFYIDHNTRTTQWEDP 86


RESULT 3
US-09-270-767-43942
; Sequence 43942, Application US/09270767
; Patent No. 6703491
; GENERAL INFORMATION:
;  APPLICANT: Homburger et al.
;  TITLE OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster
;  FILE REFERENCE: File Reference: 7326-094
;  CURRENT APPLICATION NUMBER: US/09/270,767
;  CURRENT FILING DATE: 1999-03-17
;  NUMBER OF SEQ ID NOS: 62517
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 43942
;   LENGTH: 435
;   TYPE: PRT
;   ORGANISM: Drosophila melanogaster
US-09-270-767-43942

  Query Match             73.6%;  Score 95;  DB 4;  Length 435;
  Best Local Similarity   50.0%;  Pred. No. 5.7e-09;
  Matches   16;  Conservative    1;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 GPLPXGWEXXXXXXGXXYYXXHNTXTTXWXXP 32
              |||| |||       |  :|  ||| || |  |
Db        109 GPLPEGWEERVHTDGRVFYIDHNTRTTQWEDP 140


RESULT 4
US-08-630-916A-39
; Sequence 39, Application US/08630916A
; Patent No. 6011137
;  GENERAL INFORMATION:
;    APPLICANT:  Pirozzi, Gregorio
;    APPLICANT:  Kay, Brian K.
;    APPLICANT:  Fowlkes, Dana M.
;    TITLE OF INVENTION:  IDENTIFICATION AND ISOLATION OF NOVEL
;    TITLE OF INVENTION:  POLYPEPTIDES HAVING WW DOMAINS AND METHODS OF USING SAME
;    NUMBER OF SEQUENCES:  124
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New  York
;      STATE:  New York
;      COUNTRY:  United States
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/630,916A
;      FILING DATE:  03-APR-1996
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  MISROCK, S. LESLIE
;      REGISTRATION NUMBER:  18,872
;      REFERENCE/DOCKET NUMBER:  1101-203
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 896-8864/9741
;  INFORMATION FOR SEQ ID NO:  39:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  33 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  peptide
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  5
;      OTHER INFORMATION:  /note= "A Hydrophobic Amino Acid."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  12
;      OTHER INFORMATION:  /note= "A Hydrophobic Amino Acid."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  13
;      OTHER INFORMATION:  /note= "A Hydrophobic Amino Acid."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  14
;      OTHER INFORMATION:  /note= "A Hydrophobic Amino Acid."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  16
;      OTHER INFORMATION:  /note= "A Hydrophobic Amino Acid."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  20
;      OTHER INFORMATION:  /note= "A Polar Amino Acid."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  25
;      OTHER INFORMATION:  /note= "A Hydrophobic Amino Acid."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  28
;      OTHER INFORMATION:  /note= "A Hydrophobic Amino Acid."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  31
;      OTHER INFORMATION:  /note= "A Hydrophobic Amino Acid."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  33
;      OTHER INFORMATION:  /note= "A Hydrophobic Amino Acid."
US-08-630-916A-39

  Query Match             72.1%;  Score 93;  DB 3;  Length 33;
  Best Local Similarity   70.0%;  Pred. No. 7.3e-10;
  Matches   21;  Conservative    0;  Mismatches    9;  Indels    0;  Gaps    0;

Qy          3 LPXGWEXXXXXXGXXYYXXHNTXTTXWXXP 32
              || ||||||   | ||| |||| || || |
Db          3 LPTGWEXXXTTTGTXYYHXHNTTTTTWXTP 32
```

GenCore version 5.1.6


OM protein - protein search, using sw model

Run on: October 13, 2005, 13:50:53 ; Search time 18.0952 Seconds
(without alignments)
156.763 Million cell updates/sec

Title: US-09-385-918-3
Perfect score: 218
Sequence: 1 SPLPPGWEERQDILGRTYYVNHESRRTQWKRPTPQDNL 38

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 218 | 100.0 | 927 | 3 | US-08-895-601-6 | Sequence 6, Appli |
| 2 | 209 | 95.9 | 38 | 3 | US-08-630-916A-18 | Sequence 18, Appl |
| 3 | 203 | 93.1 | 38 | 2 | US-09-066-074-11 | Sequence 11, Appl |
| 4 | 203 | 93.1 | 38 | 2 | US-08-555-912A-11 | Sequence 11, Appl |
| 5 | 203 | 93.1 | 38 | 3 | US-08-630-916A-17 | Sequence 17, Appl |
| 6 | 203 | 93.1 | 38 | 3 | US-08-348-518C-13 | Sequence 13, Appl |
| 7 | 203 | 93.1 | 38 | 3 | US-08-476-509B-13 | Sequence 13, Appl |
| 8 | 203 | 93.1 | 38 | 4 | US-09-252-404A-36 | Sequence 36, Appl |
| 9 | 203 | 93.1 | 38 | 4 | US-09-275-900-11 | Sequence 11, Appl |
| 10 | 148 | 67.9 | 834 | 3 | US-08-539-205A-6 | Sequence 6, Appli |
| 11 | 148 | 67.9 | 834 | 4 | US-09-392-163A-6 | Sequence 6, Appli |
| 12 | 142 | 65.1 | 38 | 3 | US-08-630-916A-36 | Sequence 36, Appl |
| 13 | 138 | 63.3 | 38 | 3 | US-08-630-916A-20 | Sequence 20, Appl |
| 14 | 138 | 63.3 | 38 | 3 | US-08-348-518C-14 | Sequence 14, Appl |
| 15 | 138 | 63.3 | 38 | 3 | US-08-476-509B-14 | Sequence 14, Appl |
| 16 | 133 | 61.0 | 38 | 3 | US-08-630-916A-21 | Sequence 21, Appl |
| 17 | 132 | 60.6 | 38 | 2 | US-09-066-074-12 | Sequence 12, Appl |
| 18 | 132 | 60.6 | 38 | 2 | US-08-555-912A-12 | Sequence 12, Appl |
| 19 | 132 | 60.6 | 38 | 3 | US-08-630-916A-19 | Sequence 19, Appl |
| 20 | 132 | 60.6 | 38 | 3 | US-08-348-518C-16 | Sequence 16, Appl |
| 21 | 132 | 60.6 | 38 | 3 | US-08-476-509B-16 | Sequence 16, Appl |
| 22 | 132 | 60.6 | 38 | 4 | US-09-252-404A-37 | Sequence 37, Appl |
| 23 | 132 | 60.6 | 38 | 4 | US-09-275-900-12 | Sequence 12, Appl |
| 24 | 128.5 | 58.9 | 906 | 3 | US-08-630-916A-48 | Sequence 48, Appl |
| 25 | 128 | 58.7 | 38 | 3 | US-08-630-916A-35 | Sequence 35, Appl |
| 26 | 128 | 58.7 | 474 | 4 | US-09-774-639-371 | Sequence 371, App |
| 27 | 128 | 58.7 | 752 | 4 | US-09-919-039-235 | Sequence 235, App |
| 28 | 128 | 58.7 | 852 | 2 | US-09-070-060-3 | Sequence 3, Appli |
| 29 | 128 | 58.7 | 852 | 3 | US-09-357-746-3 | Sequence 3, Appli |
| 30 | 128 | 58.7 | 854 | 2 | US-09-070-060-4 | Sequence 4, Appli |
| 31 | 128 | 58.7 | 854 | 3 | US-09-357-746-4 | Sequence 4, Appli |
| 32 | 126 | 57.8 | 89 | 4 | US-09-248-796A-18186 | Sequence 18186, A |
| 33 | 123 | 56.4 | 766 | 3 | US-08-539-205A-4 | Sequence 4, Appli |
| 34 | 123 | 56.4 | 766 | 4 | US-09-392-163A-4 | Sequence 4, Appli |
| 35 | 122 | 56.0 | 683 | 3 | US-08-630-916A-46 | Sequence 46, Appl |
| 36 | 121 | 55.5 | 30 | 4 | US-09-252-404A-3 | Sequence 3, Appli |
| 37 | 119 | 54.6 | 38 | 3 | US-08-630-916A-25 | Sequence 25, Appl |
| 38 | 119 | 54.6 | 38 | 3 | US-08-630-916A-31 | Sequence 31, Appl |
| 39 | 118 | 54.1 | 38 | 3 | US-08-630-916A-32 | Sequence 32, Appl |
| 40 | 115 | 52.8 | 38 | 3 | US-08-630-916A-24 | Sequence 24, Appl |
| 41 | 115 | 52.8 | 38 | 3 | US-08-348-518C-15 | Sequence 15, Appl |
| 42 | 115 | 52.8 | 38 | 3 | US-08-476-509B-15 | Sequence 15, Appl |
| 43 | 112 | 51.4 | 38 | 3 | US-08-630-916A-30 | Sequence 30, Appl |
| 44 | 111 | 50.9 | 735 | 3 | US-08-539-205A-2 | Sequence 2, Appli |
| 45 | 111 | 50.9 | 735 | 4 | US-09-392-163A-2 | Sequence 2, Appli |

ALIGNMENTS

RESULT 1
US-08-895-601-6
; Sequence 6, Application US/08895601
; Patent No. 6060262
; GENERAL INFORMATION:
; APPLICANT: Beer-Romero, Peggy
; APPLICANT: Strack, Peter J.
; APPLICANT: Glass, Susan J.
; APPLICANT: Rolfe, Mark
; TITLE OF INVENTION: REGULATION OF KAPPA B (IkB) DEGRADATION,
; TITLE OF INVENTION: AND METHODS AND REAGENTS RELATED THERETO
; NUMBER OF SEQUENCES: 16
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: FOLEY, HOAG & ELIOT LLP
; STREET: One Post Office Square
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109-2170
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/895,601
; FILING DATE: 16-JUL-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Vincent, Matthew P.
; REGISTRATION NUMBER: 36,709
; REFERENCE/DOCKET NUMBER: MIV-096.01
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-832-1000
; TELEFAX: 617-832-7000
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 927 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-895-601-6

Query Match 100.0%; Score 218; DB 3; Length 927;
Best Local Similarity 100.0%; Pred. No. 1.5e-21;
Matches 38; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 SPLPPGWEERQDILGRTYYVNHESRRTQWKRPTPQDNL 38
              ||||||||||||||||||||||||||||||||||||||
Db        218 SPLPPGWEERQDILGRTYYVNHESRRTQWKRPTPQDNL 255
```

```
RESULT 2
US-08-630-916A-18
; Sequence 18, Application US/08630916A
; Patent No. 6011137
;  GENERAL INFORMATION:
;    APPLICANT:  Pirozzi, Gregorio
;    APPLICANT:  Kay, Brian K.
;    APPLICANT:  Fowlkes, Dana M.
;    TITLE OF INVENTION:  IDENTIFICATION AND ISOLATION OF NOVEL
;    TITLE OF INVENTION:  POLYPEPTIDES HAVING WW DOMAINS AND METHODS OF USING SAME
;    NUMBER OF SEQUENCES:  124
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New  York
;      STATE:  New York
;      COUNTRY:  United States
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/630,916A
;      FILING DATE:  03-APR-1996
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  MISROCK, S. LESLIE
;      REGISTRATION NUMBER:  18,872
;      REFERENCE/DOCKET NUMBER:  1101-203
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 896-8864/9741
;  INFORMATION FOR SEQ ID NO:  18:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  38 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  peptide
US-08-630-916A-18

  Query Match             95.9%;  Score 209;  DB 3;  Length 38;
  Best Local Similarity   97.4%;  Pred. No. 6.2e-22;
  Matches   37;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 SPLPPGWEERQDILGRTYYVNHESRRTQWKRPTPQDNL 38
              |||||||||||||||||||||||||||||||||| ||||
Db          1 SPLPPGWEERQDILGRTYYVNHESRRTQWKRPTRQDNL 38


RESULT 3
US-09-066-074-11
; Sequence 11, Application US/09066074
; Patent No. 5952467
;  GENERAL INFORMATION:
;    APPLICANT:  Hunter et al., Tony
;    TITLE OF INVENTION:  NIMA INTERACTING PROTEINS
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  CA
;      COUNTRY:  USA
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/066,074
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/555,912
;      FILING DATE:  13-NOV-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Haile, Lisa A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07251/011001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/678-5070
;      TELEFAX:  619/678-5099
;  INFORMATION FOR SEQ ID NO:  11:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  38 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  not relevant
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    IMMEDIATE SOURCE:
;      CLONE:  Nedd4/Mouse
US-09-066-074-11

  Query Match             93.1%;  Score 203;  DB 2;  Length 38;
  Best Local Similarity   89.5%;  Pred. No. 4.2e-21;
  Matches   34;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 SPLPPGWEERQDILGRTYYVNHESRRTQWKRPTPQDNL 38
              |||||||||||:|||||||||||||||||||:| |:|
Db          1 SPLPPGWEERQDVLGRTYYVNHESRRTQWKRPSPDDDL 38


RESULT 4
US-08-555-912A-11
; Sequence 11, Application US/08555912A
; Patent No. 5972697
;  GENERAL INFORMATION:
;    APPLICANT:  Hunter et al., Tony
;    TITLE OF INVENTION:  NIMA INTERACTING PROTEINS
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  CA
;      COUNTRY:  USA
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/555,912A
;      FILING DATE:  13-NOV-1995
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Haile, Lisa A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07251/011001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/678-5070
;      TELEFAX:  619/678-5099
;  INFORMATION FOR SEQ ID NO:  11:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  38 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  not relevant
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
```